SECTION 17204 - STRUCTURED CABLE (Sytimax SCS) GROUNDING SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. Provide all materials and labor necessary to complete the installation of specific systems described herein and integration of al systems as indicated, specified herein or both. The work includes the following, as well as work not listed below but described elsewhere

1. Structured Cabling System General Provisions - Section 17100
2. Structured Cabling Equipment Racks – Section 17205
3. Backbone System Cabling – Section 17250
4. Horizontal System Cabling - Section 17260

1.2 SCOPE AND RESPONSIBILTIES

A. Refer to Section 17200 – Paragraph 1.2

1.3 RELATED DOCUMENTS

A. Refer to Section 17200 – Paragraph 1.3

1.4 QUALITY ASSURANCE

A. Refer to Section 17200 – Paragraph 1.4

1.5 SUBMITTALS

A. Refer to Section 17200 – Paragraph 1.5

1.6 SYSTEM DESCRIPTION

A. General:

1. Provide a complete Telecommunications Grounding and Bonding system as indicated in Project Documents.

2. Provide all necessary materials and labor for the Backbone Cabling system and the Telecommunications Grounding and Bonding system in all Telecommunication Entrance Facilities, Telecommunications Rooms and

Telecommunications Equipment Rooms as indicated in Project Documents.

3. Bonding and grounding of all cables, frames and equipment shall be accomplished in accordance to NEC Article 250 and TIA/EIA-607. If ARMM riser cables are utilized, all cable sheaths shall be bonded to the termination panel using number 6 copper wire.

4. All sheaths shall be bonded across any openings. Shield shall be grounded to one end only.

B. Surge Protectors.

1. Provide surge protection for all metallic cable entering from outside of the building
2. Protection of exterior power circuits.

C. Telecommunications Grounding and Bonding System

1. Provide Telecommunications Main Grounding Busbar (TMGB), Telecommunications Grounding Busbars (TGB), Telecommunications Bonding Backbones (TBB), TBB Interconnecting Bonding Conductors (TBBIBC) and Bonding Conductor for Telecommunications as indicated in Project Documents.

2. It shall be the responsibility of this contractor to ensure that the telecommunication grounding system for this facility is continuous, complete, and meets or exceeds all applicable codes and standards.

PART 2 - PRODUCTS

2.1 GENERAL

A. Provide materials listed by UL or ETL.

B. All cable must be NEC type OFNP or NEC type CMP unless otherwise noted

2.2 TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB)

A. Specifications

1. Pre-drilled solid copper

2.	Bolt hole sizing and spacing	NEMA standard
3.	Minimum thickness	0.25"
4.	Minimum dimensions and required connections	4" H x 12" W, sized to accommodate all indicated
5.	Mounting	Minimum 2" insulated standoff brackets
6.	Cover	Lettered plexiglass, as indicated in Project Documents

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following

1. Harger Lightning Protection, Inc.

2.3 TELECOMMUNICATIONS GROUNDING BUSBAR (TGB)

A. Specifications:

1.	Pre-drilled solid copper	
2.	Bolt hole sizing and spacing	NEMA standard
3.	Minimum thickness	0.25"
4.	Minimum dimensions and required connections	4" H x 12" W, sized to accommodate all indicated
5.	Mounting	Minimum 2" insulated standoff brackets
6.	Cover	Lettered plexiglass, as indicated in Project Documents

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following

1. Harger Lightning Protection, Inc.

2.4 TELECOMMUNICATIONS BONDING BACKBONE (TBB)

A. Specifications:

1.	Gage	Minimum #2
2.	Insulation	Green PVC 600V insulated

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following

1. General Cable

2.5 TBB Interconnecting Bonding Conductor (TBBIBC)

A. Specifications:

1.	Gage	Minimum #2
2.	Insulation	Green PVC 600V insulated

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following

1. General Cable

2.6 BONDING CONDUCTOR FOR TELECOMMUNICATIONS

A. Specifications:

1.	Gage	Minimum #2
2.	Insulation	Green PVC 600V insulated

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following

1. General Cable

2.7 TELEPHONE LINE SURGE PROTECTION

A. Specification

1.	Max Peak Signal Voltage:	220 V
2.	Nominal Breakdown Voltage:	300 V
3.	Max Current (10x1000 usec)	200A (T-G)+(R-G)
4.	Max Clamp Voltage:	10
5.	Typ Cap:	100 pF
6.	Max Continuos Current :	150 ma
7.	UL497A Listed	

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following

1. Edco FAS-31XT series surge protector
2. Northern Technologies

3. Ditek

PART 3 - EXECUTION

3.1 INSTALLATION

A. Grounding:

1. Ground all equipment as per manufacturer's recommendations, NEC and TIA/EIA guidelines.
2. Provide equipment grounding conductor from equipment grounding lugs to ground bar.
3. Provide a #6 AWG green insulated grounding conductor from LAN rack to ground bar.
4. Provide a #6 AWG green insulated grounding conductor from each end of the metallic sheath on the telephone backbone cable to the ground bar.

3.2 LABELING

A. Grounding and Bonding System

1. Use TMGB for the Telecommunications Main Grounding Busbar
2. Provide an identifier for each Telecommunications Grounding Busbar that incorporates the identifier of the Telecommunications Space the busbar serves.
3. Label both ends of all grounding conductors with both bus bars connected.

3.3 TESTING

A. General:

1. Certify system is complete and functional.
2. Test all cabling and connections. Perform final functional tests in presence of the Architect.
3. Complete certified testing report.

END OF SECTION 17204